

# KOYUK HEALTH CLINIC



## ALASKA RURAL PRIMARY CARE FACILITY ASSESSMENT AND INVENTORY SURVEY REPORT

FEBRUARY 28, 2002



## Table of Contents

<b>1. EXECUTIVE SUMMARY</b>	<b>1</b>
A. OVERVIEW	1
B. RENOVATION/UPGRADE AND ADDITION	2
C. NEW CLINIC	2
<b>2. GENERAL INFORMATION</b>	<b>3</b>
A. PURPOSE OF REPORT AND ASSESSMENT PROCESS	3
B. ASSESSMENT TEAM	3
C. REPORT FORMAT	3
D. SITE INVESTIGATION	3
<b>3. CLINIC INSPECTION SUMMARY</b>	<b>5</b>
A. COMMUNITY INFORMATION	5
B. GENERAL CLINIC INFORMATION	6
1) Physical Plant Information	6
2) Community Program Sheet	6
C. PROGRAM DEFICIENCY NARRATIVE	7
1) Space Requirements and Deficiencies	7
2) Building Issues	8
3) Functional Design Issues	8
4) Health Program Issues	9
5) Utilities	9
D. ARCHITECTURAL / STRUCTURAL CONDITION	9
1) Building Construction	9
2) Interior Construction	10
3) Structural	10
E. MECHANICAL CONDITION	10
1) Heating System	10
2) Ventilation System	11
3) Plumbing System	11
F. ELECTRICAL CONDITION	11
1) Electrical Service	11
2) Power Distribution	11
3) Grounding System	11
4) Exterior Elements	12

5) Electrical devices and lighting _____	12
6) Emergency System _____	12
7) Fire Alarm System _____	12
8) Telecommunication _____	13
G. CIVIL / UTILITY CONDITION _____	13
1) Location of Building _____	13
2) Site Issues _____	13
3) Proximity of Adjacent Buildings _____	13
4) Utilities _____	13
H. EXISTING FACILITY FLOOR PLAN (SITE PLAN IF AVAILABLE: _____	14
<b>4. DEFICIENCY EVALUATION _____</b>	<b>15</b>
A. DEFICIENCY CODES: _____	15
B. PHOTOGRAPHS _____	17
C. COST ESTIMATE GENERAL PROVISIONS _____	17
1) New Clinic Construction _____	17
2) Remodel, Renovations, and Additions _____	18
<b>5. SUMMARY OF EXISTING CLINIC DEFICIENCIES _____</b>	<b>20</b>
<b>6. NEW CLINIC ANALYSIS _____</b>	<b>21</b>
<b>7. CONCLUSIONS AND RECOMMENDATIONS _____</b>	<b>23</b>

**Appendix A: Specific Deficiencies Listings**  
**Appendix B: Reference Photographs**

## 1. EXECUTIVE SUMMARY

### A. OVERVIEW

The purpose of this report is to document rural community health program clinic needs. Those needs have been assessed from several perspectives. This is the second stage of the planning and implementation process for improving the quality of rural primary care through capital improvements to community clinics.

The first stage was development of the "Alaska Rural Primary Care Facility Needs Assessment" dated 10/23/2000. The purpose in part of this effort was to establish base lines for the planning and implementation to follow. This second stage is to document rural community health clinic needs and conditions from several perspectives as follows:

- 1) A spatial assessment involving spaces (as-built floor plan) for comparison with pre-established Alaska Rural Primary Care Facility (ARPCF) space basis, as set forth in the ARPCF needs assessment dated 10/23/2000.
- 2) A code and condition survey of the existing facility
- 3) Identification of a site for a new facility (if applicable/decided) and the status of services to that site (road, electricity, water, sewer, etc.).
- 4) Documentation of functional inputs as communicated by local people or observed by the assessment team (Note: functional planning was a component of the needs assessment in the stage 1).
- 5) Development of options to facilitate programmatic and technical needs and deficiencies,
- 6) Costing of those options and
- 7) Recommendations as to the option or options that best address the clinic need and deficiencies<sup>1</sup>.

ARPCF clinic basis were standards established in stage 1 based on population. They translate into three clinic sizes as follows:

#### Small Clinic

Population	20-100
Space Standard	1,535 gsf (heated)

#### Medium Clinic

Population	101-500
Space Standard	1,989 gsf (heated)

#### Large Clinic

Population	501+
Space Standard	2,459 gsf (heated) <sup>2</sup>

<sup>1</sup> There are only four options available in any rural community as follows: 1) New Facility, 2) Existing Facility renovations and or additions, 3) limited scope renovations and/or additions – driven by committed funding from either capital or operating perspectives (this option is not costable without scope or funding definition), 4) status quo (no change) (note: any of these options can apply to combined facilities existing or envisioned.)

<sup>2</sup> The intent of the code and condition survey is to identify and cost deficiencies inclusive of spatial deficiencies. The accumulation of those costs is then intended to be compared to the cost of a new clinic. If the costs of renovations and additions exceed 75% of new construction then a new clinic option is considered viable.

Koyuk has a population of 297 (2000 Census). This qualifies it for a medium size clinic of 1,989 gsf. The existing facility is 1,107 gsf resulting in a spatial deficiency of 882 gsf. The facility was built in 1989. It is a super insulated structure with R-60 roof, R-60 walls and R-60 floor assemblies. Users claim the facility has settlement or shifting problems. There is some evidence of this in the suspended ceiling systems. Users say that the building is set on a gravel pad, yet bedrock is a short distance down. With foundation improvements and aside from cost, this structure is a candidate for the renovations and additions.

Key community issues and perspectives are as follows:

- ◆ Clinic is small.
- ◆ The Norton Sound Health Corporation is reported to be considering communities of 300 & up for physician assistants; this requires an office in the clinic and housing in the community.
- ◆ Clinic shuts down in an emergency – trauma patients have to be managed in the waiting area, and concerned family members have to be asked to leave.
- ◆ Fixtures on the north end of the building drain to a septic tank. The remainder drains to community sewer system through a typical sewer service connection.
- ◆ Door sizes and stretcher access do not work.
- ◆ Want storage for clinic van.
- ◆ Want counseling office, which is currently at the church and is not discreet.
- ◆ Want travel clerk office.
- ◆ There is space on either side of the existing clinic for a new clinic. This would leave the old clinic for conversion to housing.

## **B. RENOVATION/UPGRADE AND ADDITION**

This option is as previously discussed under A Overview. Its probable impacts are diagrammed in drawing A-4, which is an overlay of ARPCF spaces onto the existing floor plan. The cost of renovations and additions to the existing facility is much more expensive than the cost of new construction. The existing clinic at 1,107 gsf would easily convert to alternative uses such as housing for a physician's assistant.

Given the above discussions the consulting team recommends a new clinic for Koyuk. Additionally the consulting team recommends investigation into the physician assistant issue and overnight patient care due to weather delays in transporting critical patients.

## **C. NEW CLINIC**

This option is as cost summarized in Section A Overview. It is based on ARPCF space standards set in Stage I of this planning process and as costed under section 6 new clinic analysis of this report for a medium size clinic. The community wants the new larger clinic as the community is growing, and community representatives indicated the current clinic is in a good location with available utilities. A site for a new clinic adjacent to the old clinic was indicated as available. However as Koyuk is a community with steep grades a site downhill from the road may create a better opportunity for level access into the facility. The consulting team recommends a new clinic for Koyuk.

## **2. GENERAL INFORMATION**

### **A. PURPOSE OF REPORT AND ASSESSMENT PROCESS**

ANTHC has entered into a cooperative agreement with the Denali Commission to provide management of the small clinic program under the Alaska Rural Primary Care Facility assessment, planning, design, and construction. Over 200 clinics will be inspected through the course of the program. The purpose of the Code and Condition survey report is to validate the data provided by the community in the Alaska Rural Primary Care Facility Needs Assessment and to provide each community with a uniform standard of evaluation for comparison with other communities to determine the relative need between the communities of Alaska for funding assistance for the construction of new or remodeled clinic facilities. The information provided in this report is one component of the scoring for the small clinic RFP that the Denali Commission sent to communities in priority Groups 3 and 4. The information gathered will be tabulated and analyzed according to an asset of fixed criteria that should yield a priority list for funding. Additionally, the relative costs of new construction vs. remodel/addition will be evaluated to determine the most efficient means to bring the clinics up to a uniform standard of program and construction quality.

A team of professional Architects and Engineers traveled to the site and completed a detailed Field Report that was revised by all parties. Subsequently, the team completed a draft and then final report of the facility condition.

### **B. ASSESSMENT TEAM**

The survey was conducted on December 12, 2001 by Robert F. Bezek, Architect, Bezek Durst Seiser, Inc. and Charlie Chien M.E. PDC, Inc., and Lloyd Persson, ANTHC. ANTHC made introductions and conducted village briefings to ensure complete understanding of the inspection process. Village contacts were: Alfred Adams, IRA Member; Beverly Nagoonick, IRA Vice President; Debra Kimoktook, acting mayor; Norman Johnson, Koyuk City Council; Leslie Charles, IRA Member Abraham Arosogok Sr.; and Tracy Kinoktoak, City Clerk. Team members who assisted in the preparation of the report from information gathered included members of the field team above and Robert Bezek, Bezek Durst Seiser, Inc., and Charlie Chien M.E. PDC, Inc.

### **C. REPORT FORMAT**

The format adopted is a modified "Deep Look" format, a facilities investigation and condition report used by both ANTHC and the Public Health Service, in maintaining an ongoing database of facilities throughout the country. Facilities are evaluated with respect to building code compliance, general facility condition, and spatial deficiencies. The written report includes these evaluations, in addition to sketches of building construction details and identification of potential sites (where available) for a new clinic. This information is available for viewing at ANTHC's Anchorage offices and will be held for reference.

### **D. SITE INVESTIGATION**

On December 12, 2001 the team flew to the site. ANTHC briefed those at the site as to our purpose. The facility was then as built and a code and condition survey conducted. The process was concluded by

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meeting with local people noting their issues and comments and briefly sharing the results of the survey. A little over three hours was spent on site with sufficient time to investigate general foundations, structure, condition, and mechanical and electrical systems.

### 3. CLINIC INSPECTION SUMMARY

#### A. COMMUNITY INFORMATION

##### Population:

- ◆ 297 (2000 Census)
- ◆ 2<sup>nd</sup> Class City, Unorganized, Bering Straits Schools, Bering Straits Native Corp

**Location:** Koyuk is located at the mouth of the Koyuk River, at the northeastern end of Norton Bay on the Seward Peninsula, 90 air miles northeast of Nome. It lies at approximately 64d 56m N Latitude, 161d 09m W Longitude. (Sec. 32, T006S, R012W, Kateel River Meridian.) Koyuk is located in the Cape Nome Recording District. The area encompasses 4.7 sq. miles of land and 0 sq. miles of water. Koyuk has a subarctic climate with a maritime influence.

**History:** The site of "Iyatayet" on Cape Denbigh to the south has traces of early man that are 6,000 to 8,000 years old. The villagers were historically nomadic. Lt. Zagoskin of the Russian Navy noted the village of "Kuyukhak-miut" here in 1842-44. A Western Union Telegraph expedition in 1865 found the village of "Konyukmute." Around 1900, the present town site began to be populated, where supplies could easily be lightered to shore. Two boom towns grew up in the Koyuk region around 1914: Dime Landing and Haycock. The "Norton Bay Station," 40 miles upriver, was established to supply miners and residents in 1915. In addition to gold, coal was mined a mile upriver to supply steam ships and for export to Nome. The first school began in the church in 1915; the U.S. government built a school in Koyuk in 1928. The City was incorporated in 1970.

**Culture:** Koyuk is a traditional Unalit and Malemiut Eskimo village that speaks a dialect of Inupiat Eskimo. Residents maintain a subsistence lifestyle. The sale or importation of alcohol is banned in the village.

**Economy:** The Koyuk economy is based on subsistence, supplemented by limited part-time jobs. Unemployment is high. There is a small amount of commercial fishing, primarily for herring, and some income is derived from reindeer herding. 13 residents hold commercial fishing permits. The main sources of meat are fish, reindeer, seal, beluga whale and moose.

**Facilities:** A piped water and sewer system was recently completed for the west side of town, serving 51 households. The east loop system is under construction. The school has requested funding to connect to the new sewer system, since its septic effluent is posing a health hazard. DEC has approved the landfill for use, although it is not permitted. Funds have been requested to construct a new water plant and small washeteria.

**Transportation:** There are no roads connecting Koyuk with other villages, although an 18-mile road to Six Mile Point is under construction. Access is limited to air and sea. There is a State-owned 3,000' gravel runway which was recently improved. Regular flight service from Nome and Unalakleet is available. Supplies arrive in Nome and are lightered to shore. There is no dock in the village, although the City has requested funds for a small boat harbor feasibility study.

**Climate:** Koyuk has a subarctic climate with a maritime influence. Average summer temperatures range from 46 to 62; winter temperatures average -8 to 8. Annual precipitation is 19 inches, including 40 inches



of snowfall. Extremes from -49 to 87 have been recorded. Norton Bay is usually ice-free from May to October.

## **B. GENERAL CLINIC INFORMATION**

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### **1) Physical Plant Information**

The existing clinic is a 1,107 gsf residential<sup>3</sup> grade super insulated facility with approximately R-60 floor/walls/attic. Exterior walls are double studded and approximately 16" thick. The building is placed on treated wood pads sitting on gravel over a filter fabric over natural grade. Local people stated bedrock was not far below. The building has had some movement, which the local people attribute to the foundation not going to bedrock. That movement can be seen in some suspended ceilings. There is a Monitor stove for heating and no ventilation system. There is very little ADA clearance.

### **2) Community Program Sheet**

Attached at the end of this section is the Community Program Sheet completed by the City of Koyuk.

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<sup>3</sup> The use of the term residential has the following assumed meanings:

Structural – residential live loads usually range from 20 to 40 psf. The minimum live loads for clinics should be 50 psf in the office areas. For computer use areas the load can be as much as 100 psf. Operating rooms and laboratories are generally designed with a live load of 60 psf. With the village clinics being relatively small, I would probably design the entire floor system at 60 psf with the exception of the record keeping area. This area should be designed for a minimum of 100 psf.

**C. PROGRAM DEFICIENCY NARRATIVE**

**1) Space Requirements and Deficiencies**

**SPACE COMPARISON MATRIX**  
**Current Koyuk Actual SF to Denali Commission Medium Clinic**

Alaska Rural Primary Care Facility

Purpose / Activity	Designated Itinerant			Current Clinic			Medium Clinic			Difference		
				Actual Net S.F.			ARPCF SF					
	Size	No.	Net Area (SF)	Size	No.	Net Area (SF)	Size	No.	Net Area (SF)	Size	No.	Net Area (SF)
Arctic Entries				44	1	44	50	2	100			-56
Waiting/Recep/Closet				226	1	226	150	1	150			76
Trauma/Telemed/Exam ( Exam 1)				131	1	131	200	1	200			-69
Office/Exam ( Exam 2)				130	1	130	150	1	150			-20
Admin./Records (Office/Records)				98+18	1	116	110	1	110			6
Pharmacy/Lab (Lab/Kitchen)\				85	1	85	80	1	80			5
Portable X-ray				0	0	0			0			0
Specialty Clinic/Health Ed/Conf.				0	0	0	150	1	150			-150
Patient Holding/Sleeping Room				100	1	100	80	1	80			20
Storage				0	0	0	100	1	100			-100
HC Toilet				57	1	57	60	2	120			-63
Janitor's Closet				33	1	33	30	1	30			3
									0			0
									0			0
Subtotal Net Area						922			1270			-348
Circulation & Net/Gross Conv. @45%						185			572			-387
Subtotal (GSF)						1107			1842			735
Mechanical Space @ 8%						0			147			-147
Total Heated Space						1107			1989			-882
Morgue (unheated enclosed space)							30	1	30			-30
Ext. Ramps, Stairs, Loading		HC Accessible			As Required			As Required			As Required	

a. Overall Space Deficiencies: The overall space deficiency is 882 gsf.

- b. Specific Room Deficiencies: Most notable specific room deficiencies are: trauma room (trauma is actually managed in the waiting room); no specialty clinic; inadequate storage; and no handicap access toilets.
- c. Other Size Issues: There is only one bathroom which is non-ADA and too small. There is also inadequate office space. Reference the space comparison matrix preceding.

## 2) Building Issues

- a. Arctic Entries: There is only one entry and it is an arctic entry. The only issue with this arctic entry is that the gurney and emergency gear is stored in the arctic entry due to a lack of storage space. Ramp entrances are not handicapped accessible.
- b. Waiting / Reception: Has a coat rack and has seating for 7 individuals, which is reasonable.
- c. Exam / Trauma: There is no exam trauma, trauma patients are taken care of in the waiting room, and they move the furniture out and the gurney in. Gurneys cannot be moved into the exam rooms.
- d. Exam Room: Besides trauma, there are two exam rooms with sheet vinyl flooring, residential cabinetry and residential sinks. There is a refrigerator and a dental chair in one of the exam rooms. The dental area as a specialty clinic is a problem as the dental chair takes up a lot of valuable space, and when the dentist is in the community, this activity takes all available space.
- e. Office / Administration / Records: This clinic has one office space; record storage in this office space is extremely congested. They use a storage closet to make room for a copier.
- f. Pharmacy / Lab: None. Pharmacy supplies are kept in one of the exam rooms.
- g. Specialty Clinic / Health Education / Conference: None.
- h. Patient Holding / Sleeping Room: There is an itinerant room that also has a computer for one of the staff, it is reported to disturb people trying to sleep in that room, due to CPU noise.
- i. Storage: There is no storage; all the storage rooms are utilized for other functions.
- j. HC Toilet Facilities: The toilet facility is not handicapped accessible, neither the tub, toilet nor sink. The sink is a residential base cabinet.
- k. Janitors Room: The janitor's room is reasonable.
- l. Mechanical/Boiler Room: None.
- m. Ancillary Rooms: None.

## 3) Functional Design Issues

The two most significant design issues are the lack of a suitable trauma room and lack of specialty clinic space.

#### 4) Health Program Issues

- a. Patient comfort and privacy: Trauma patients are brought directly into the waiting area and treated. There is no comfort or privacy for either patients or family.
- b. Medical/Infectious Waste: Medical and infectious waste is packaged and sent out.
- c. Infection Control: The cleanliness of the clinic is good. There is a sheet vinyl flooring and rubber base in the exam rooms, kitchen, and storage room with residential grade carpeting in the waiting and hallway, and commercial grade carpeting in the office/admin and itinerant room. All other floor finishes are sheet vinyl. Wall finishes are gypsum board with paint; ceiling is a suspended ceiling below a gypsum ceiling. There appears to be a fair amount of separation at the walls due to a bad foundation, and the suspended ceiling is also affected by the foundation problems.
- d. Insect and Rodent Control: No reported problems.
- e. Housekeeping: No reported problems.

#### 5) Utilities

- a. Water Supply: The water supply is city. Water supply comes from the water plant located across the street. It is not a traditional water service connection.
- b. Sewage Disposal: Fixtures in the north side of the building still connected to a septic tank while those in the south end are connected to city sewage system through a typical sewer service connection.
- c. Electricity: Overhead lines.
- d. Telephone: Overhead lines.
- e. Fuel Oil: Yes.

### D. ARCHITECTURAL / STRUCTURAL CONDITION

#### 1) Building Construction

- a. Floor Construction: 1-1/8" T&G plywood over 24" TVI's at 24" on center with R-60 batt insulation (2 layers), Tyvek (inappropriately used), and plywood soffits.
- b. Exterior Wall Construction: Double 2x4 studs with R-60 batt insulation gypsum board inside and plywood sheathing and vinyl siding outside.
- c. Roof Construction: Metal roofing over building paper over plywood over wood trusses with R-60 batt insulation vapor retarder and gypsum board.
- d. Exterior Doors: Exterior doors are too narrow for gurney transfer and lack handicap hardware.
- e. Exterior Windows: Vinyl insulated.
- f. Exterior Decks, Stairs, and Ramps: Wood frame and grip strut.

## 2) Interior Construction

- a. Flooring: Carpet two grades and sheet vinyl
- b. Walls: Paint.
- c. Ceilings: Suspended acoustical tile.
- d. Interior doors: wood/wood frames
- e. Casework: All residential kitchen type base and upper cabinets of a relatively inexpensive type.
- f. Furnishings: Furnishings are in generally good condition however are old, some of the chairs are a little bit beaten.
- g. Insulation: Generally R-60 Batt insulation in multiple layers everywhere.
- h. Tightness of Construction: This is an extremely tight facility. It was uncomfortably warm during the site visit.
- i. Arctic Design: The arctic design of the envelope is for super energy efficiency. However the foundation design is a problem and has resulted in movement and damage to the facility.

## 3) Structural

- a. Foundations: The foundation system needs to be replaced. It is simply post and pad placed gravel on bad soil so it is moving around. Bedrock is reportedly close to surface.
- b. Walls and Roof: Both are super insulated, see wall section drawing.
- c. Stairs, Landings, and Ramps: Wood frame and grip struck.

## E. MECHANICAL CONDITION

### 1) Heating System

- a. Fuel Storage and Distribution: An above ground single wall 55-gallon capacity heating fuel oil storage tank installed on a wood stand serves the clinic building heating unit. The fuel tank and the support stand are in poor condition. The distance between the fuel tank and the building is less than the required distance of 5 feet.
- b. Heating Unit: A single oil fired Monitor heater in the waiting area serves the clinic portion of the building with additional heating is provided by a hydronic cabinet unit heater in the waiting area.
- c. Heat Distribution System: Main building hydronic heat distribution system is connected to the hydronic heat system that from the Water Treatment Plant boilers. The heat is distributed through pre-insulated pipes in an arctic pipe utilidor. This system is interconnected so that a failure in one side affects the operation of the other building. A dedicate heat generation system at the clinic building should be considered.

## 2) Ventilation System

- a. System: An air-to-air heat exchanger in the crawl space provides a limited degree of ventilation for the building. In addition, the perimeter rooms are equipped with operable windows.
- b. Exhaust Air: The restroom and the janitor's closet are not equipped with local exhaust fans.

## 3) Plumbing System

- a. Water System: The building is served by piped water system delivered from the municipal water distribution system. An electric water heater in the Janitor's Closet provides domestic hot water for the clinic building.
- b. Sewer System: The front half of the building sewer system discharges to the piped municipal sewer system while the rear portion of the building discharges to an original small leach field behind the building.
- c. Fixtures: The fixtures observed at this building are in good condition but the restroom and exam room fixtures do not conform to acceptable American Disability Act access and general patient care requirements.

## F. ELECTRICAL CONDITION

### 1) Electrical Service

- a. The electrical service for this clinic is a 100 amp 120/240 volt AC single phase three wire system.
- b. Ahead of the meter/main disconnect is a manual transfer switch. When a transfer switch is installed in front of the service disconnect the equipment must be listed for use as service equipment.
- c. Un-fused conductors and exposed live parts are accessible in the transfer switch. The potential for electrocution is exacerbated due to the equipment not being locked and is accessible to the public.

### 2) Power Distribution

- a. The feeder to the Main Distribution Panel (MDP) appears to consist of three # 4 copper conductors for phase and neutral and one #4 copper conductor for the grounding conductor. #4 conductors are undersized for a 100 amp feeder per National Electric Code (NEC) 310-15 and Table 310-16.
- b. The Clinic MDP is a 30-circuit Square D panelboard the MDP currently has 8 spare breaker spaces.
- c. The feeder does contain a grounding conductor and does not rely on the conduit for grounding between the MDP and service equipment.

### 3) Grounding System

- a. The electrical service does not appear to be bonded to the water line or interior metallic piping system. A grounding electrode system is required, per NEC 250 Part C.

#### **4) Exterior Elements**

- a. The clinic has one exterior general use receptacle. The lack of exterior receptacles usually forces extension cords to be plugged in inside the building and routed through doorways, which is a violation of NEC Article 400.
- b. It is recommended to install individual branch circuits and GFCI protected receptacles for automotive block heaters, commonly known as head bolt heaters.
- c. Exterior lighting is provided by a single light fixture mounted above the entry door to the clinic.

#### **5) Electrical devices and lighting**

- a. Duplex receptacles are the grounding type.
- b. The total number of receptacles appears sufficient for the equipment and loads in place in the clinic at this time.
- c. GFCI protection is not provided for receptacles located near sinks, although not a code violation for the exam and bath areas it is recommended to provide GFCI protection for all receptacles installed near wet areas such as the sinks in the clinic
- d. Lighting fixtures throughout the clinic are predominantly 4' surface mounted fluorescent fixtures with wrap around lenses and appear to be in good condition.
- e. The quantity of installed fixtures does not provide light levels recommended by IES for this occupancy.
- f. The wiring in the clinic is primarily non-metallic sheathed cable (NM). Health Care Facilities are required to have all receptacles and fixed electric equipment, in patient care areas, supplied by circuits in grounded metal raceways with an insulated grounding conductor.

#### **6) Emergency System**

- a. A single exit sign is currently installed, located on the interior side of the main exit. The exit light is not operational. Where exit lighting is required by building code, the exit lighting shall be powered and provide minimum footcandle levels, per IBC Section 1003. Branch circuits for exit lighting shall comply with NEC 700-12.
- b. One emergency lighting fixture is installed in the waiting room. The emergency fixture is not operational. Where, emergency egress lighting is required by building code, the fixtures shall be powered and provide minimum footcandle (fc) levels, per IBC Section 1003. Branch circuit wiring for emergency lighting shall comply with NEC 700-12.

#### **7) Fire Alarm System**

- a. Residential type smoke detectors are installed in some locations in the clinic. Not all the smoke detectors are functional. Fire alarm systems, where required by building codes must comply with the provisions of NFPA 72 (National Fire Alarm Code), NEC article 725 and the IBC Section 907.
- b. The clinic has a fire alarm system. The fire alarm system is not functional due to a fault condition when the panel is energized.

- c. The clinic has a sprinkler system connected to the domestic water. It was not determined at the time of the inspection if flow and tamper valves have been installed and tied to the fire alarm panel.

## 8) Telecommunication

- a. The Data Telecommunications system currently provides service to the telephone system and the "Telemed" remote diagnostic system.
- b. A wall mounted data cabinet is located on the wall above the filing cabinets in the office
- c. The number of data and telephone outlets is not sufficient for the clinic's current and future need

## G. CIVIL / UTILITY CONDITION

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### 1) Location of Building

- a. Patient Access: The community placed the clinic at the outer edge of the community but also with easy access to the airport.
- b. Service Access: There is a road to the front of the facility, and service access is good.
- c. Other Considerations: The facility is located on utilities.

### 2) Site Issues

- a. Drainage: Drainage for the site is adequate.
- b. Snow: This is a light snow year according to the locals. 5 to 6 feet of snow might otherwise be expected. No snow drifting problems reported.

### 3) Proximity of Adjacent Buildings

- a. Downhill into adjacent community.

### 4) Utilities

- a. Water Supply: The water supply to the clinic is not a typical water service connect but plumbed directly from the water plant. Eventually the service should be changed. If the building were to be moved, depending on the location, this existing service may not be the best service method.
- b. Sewage Disposal: Septic from north end of the facility. Sewage from the north end of the building should be plumbed to the south end where fixtures are plumbed to city sewer.
- c. Electricity: Overhead lines.
- d. Telephone: Overhead lines.



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**H. EXISTING FACILITY FLOOR PLAN (SITE PLAN IF AVAILABLE:**

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We have attached drawings, as we have been able to identify, find, or create as part of this report. We have endeavored to provide all drawings for all the sites; however, in some cases exact existing site plans were not available. We have provided as indicated below:

- |    |                                 |
|----|---------------------------------|
| A1 | Existing Site Plan              |
| A2 | Existing Facility Floor Plan    |
| A3 | Existing Typical Wall Section   |
| A4 | Addition to Existing Floor Plan |
| A5 | Medium Clinic Floor Plan        |

## 4. DEFICIENCY EVALUATION

### A. DEFICIENCY CODES:

The deficiencies are categorized according to the following deficiency codes to allow the work to be prioritized for funding. The codes are as follows:

**01 Patient Care:** Based on assessment of the facilities ability to support the stated services that are required to be provided at the site. Items required for the patients social environment such as storage, privacy, sensitivity to age or developmental levels, clinical needs, public telephones and furnishings for patient privacy and comfort.

**02 Fire and Life Safety:** These deficiencies identify areas where the facility is not constructed or maintained in compliance with provisions of the state mandated life safety aspects of building codes including the Uniform Building Code, International Building Code, The Uniform Fire Code, NFPA 101, The Uniform Mechanical and Plumbing Codes and The National Electrical Code. Deficiencies could include inadequacies in fire barriers, smoke barriers, capacity and means of egress, door ratings, safe harbor, and fire protection equipment not covered in other deficiency codes.

**03 General Safety:** These deficiencies identify miscellaneous safety issues. These are items that are not necessarily code items but are conditions that are considered un-safe by common design and building practices. Corrective actions required from lack of established health care industry safety practices, and local governing body code safety requirements. I.e. Occupational Safety Health Administration (OSHA) codes & standards.

**04 Environmental Quality:** Deficiencies based on Federal, State and Local environmental laws and regulations and industry acceptable practices. For example this addresses DEC regulations, hazardous materials and general sanitation.

**05 Program Deficiencies:** These are deficiencies that show up as variations from space guidelines evaluated through industry practices and observation at the facility site and documented in the facility floor plans. These are items that are required for the delivery of medical services model currently accepted for rural Alaska. This may include space modification requirements, workflow pattern improvements, functional needs, modification or re-alignment of existing space or other items to meet the delivery of quality medical services. (Account for new space additions in DC 06 below)

**06 Unmet Supportable Space Needs:** These are items that are required to meet the program delivery of the clinic and may not be shown or delineated in the Alaska Primary Care Facility Space Guideline. Program modifications requiring additional supportable space directly related to an expanded program, personnel or equipment shall be identified in this section; for example additional dental space,

specialty clinic, storage, or program support space that requires additional space beyond the established program.

**07 Disability Access Deficiencies:** The items with this category listing are not in compliance with the Americans with Disabilities Act. This could include non-compliance with accessibility in parking, entrances, toilets, drinking fountains, elevators, telephones, fire alarm, egress and exit access ways, etc.

**08 Energy Management:** These deficiencies address the efficiency of lighting, heating systems/fuel types and the thermal enclosures of buildings, processes, and are required for energy conservation and good energy management.

**09 Plant Management:** This category is for items that are required for easy and cost efficient operational and facilities management and maintenance tasks of the physical plant.

**10 Architectural M&R:** Items affecting the architectural integrity of the facility, materials used, insulation, vapor retarder, attic and crawlspace ventilation, general condition of interiors, and prevention of deterioration of structure and systems.

**11 Structural Deficiencies:** These are deficiencies with the fabric of the building. It may include the foundations, the roof or wall structure, the materials used, the insulation and vapor retarders, the attic or crawl space ventilation and the general condition of interior finishes. Foundation systems are included in this category.

**12 Mechanical Deficiencies:** These are deficiencies in the plumbing, heating, ventilating, air conditioning, or medical air systems, interior mechanical utilities, requiring maintenance due to normal wear and tear that would result in system failure.

**13 Electrical Deficiencies:** These are deficiencies with normal or emergency power, electrical generating and distribution systems, interior electrical and communications utilities, fire alarm systems, power systems and communications systems within a building that should be repaired or replaced on a recurring basis due to normal wear and tear that would otherwise result in system failure.

**14 Utilities M&R:** This category is used for site utilities for incoming services to facilities that are required for the building to be fully operational. Deficiencies may include sewer and water lines, water wells, water tanks, natural gas and propane storage, electric power and telecommunications distribution, etc.

**15 Grounds M&R:** Real property grounds components that should be replaced on a recurring basis due to normal wear and tear. Deficiencies with respect to trees, sod, soil erosion, lawn sprinklers, parking, bridges, pedestrian crossings, fences, sidewalks & roadways, and site illumination etc. are considerations.

**16 Painting M&R:** Any painting project that is large enough to require outside contractors or coordination with other programs.

**17 Roof M&R:** Deficiencies in roofing, and related systems including openings and drainage.

**18 Seismic Mitigation:** Deficiencies in seismic structural items or other related issues to seismic design, including material improperly anchored to withstand current seismic requirements effect. The elements under consideration should include the cost incidental to the structural work like architectural and finishes demolition and repairs.

## B. PHOTOGRAPHS

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We have provided photographs attached which are noted to describe the various deficiencies described in the narratives and itemized in the summary below. The photos do not cover all deficiencies and are intended to provide a visual reference to persons viewing the report who are not familiar with the facility.

We have included additional photos as Appendix B for general reference. These are intended to add additional information to the specific deficiencies listed and to provide general background information.

## C. COST ESTIMATE GENERAL PROVISIONS

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### 1) New Clinic Construction

- a. Base Cost: The Base Cost provided in Section VI of this report is the direct cost of construction, inclusive of general requirements (described below) and contingency for design unknowns (an estimating contingency). The base cost is exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The Project Factors and Area Cost Factor are multipliers of the base costs.
  - General Requirements are based on Anchorage costs without area adjustment. It is included in the Base Cost for New Clinics. These costs are indirect construction cost not specifically identifiable to individual line items. It consists of supervision, materials control, submittals and coordination, etc. The general requirements factor has not been adjusted for Indian Preference.
  - The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned.
- b. Project Cost Factors
  - Equipment Costs for new medical equipment has been added at 17% of the cost of new floor space.
  - Design Services is included at 10% to cover professional services including engineering and design.
  - Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.

- Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.
- c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.
- d. Estimated Total Project Cost of New Building: This is the total estimated cost of the project, including design services. The construction contract will be work subject to Davis Bacon wages, and assumes construction before year-end 2001. No inflation factor has been applied to this data.

## 2) Remodel, Renovations, and Additions

- a. Base Cost: The Base Cost provided in the specific deficiency sheets is the direct cost of construction, exclusive of overhead and profit, mark-ups, area cost factors and contingencies. Material costs for the project are all calculated FOB Anchorage and labor rates are based on Davis Bacon wages, regionally adjusted to Anchorage. Most of the deficiency items do not constitute projects of sufficient size to obtain efficiency of scale. The estimate assumes that the projects are completed either individually, or combined with other similar projects of like scope. The numbers include moderate allowances for difficulties encountered in working in occupied spaces and are based on remodeling rather than on new construction costs. Transportation costs, freight, Per Diem and similar costs are included in the base costs. The General Requirements, Design Contingency and Area Cost Factors are multipliers of the base costs.
  - The cost of Additions to clinics is estimated at a unit cost higher than new clinics due to the complexities of tying into the existing structures.
  - Medical equipment is calculated at 17% of Base Cost for additions of new space only and is included as a line item in the estimate of base costs.
- b. General Requirements Factor: General Requirements Factor is based on Anchorage costs without area adjustment. The factor is 1.20. It is multiplied by the Base Cost to get the project cost, exclusive of planning, architecture, engineering and administrative costs. This factor assumes projects include multiple deficiencies, which are then consolidated into single projects for economies of scale. The general requirements factor has not been adjusted for Indian Preference.
- c. Area Cost Factor: The Area Cost Factor used in the cost estimates for this facility is shown in Section VI of this report. The area cost factors are taken from a recent study completed for the Denali Commission for statewide healthcare facilities. The numbers are the result of a matrix of cost variables including such items as air travel, local hire costs, room and board, freight, fire protection equipment, foundation requirements, and heating equipment as well as contractor costs such as mobilization, demobilization, overhead, profit, bonds and insurance. These parameters were reconsidered for each village, following the site visit, and were modified, if necessary.
- d. Contingency for Design Unknowns (Estimating Contingency): The Design Unknowns Contingency is an estimator's contingency based on the schematic nature of the information provided, the lack of any real design, and the assumption that any project will encompass related work not specifically mentioned. The factor used is 1.15.

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- e. Estimated Total Cost: This is the total estimated bid cost for work completed under Davis Bacon wage contracts, assuming construction before year-end 2001. This is the number that is entered in the front of the deficiency form. No inflation factor has been applied to this data.
- f. Project Cost Factors: Similar to new clinics, the following project factors have been included in Section VI of this report.
- Design Services is included at 10% to cover professional services including engineering and design.
  - Construction Contingency is included at 10% of the Base Costs to cover changes encountered during construction.
  - Construction Administration has been included at 8% of the Base Costs. This is for monitoring and administration of the construction contract.
- g. Estimated Total Project Cost of Remodel/Addition: This is the total estimated cost of the project including design services, the construction contract cost for work completed under Davis Bacon wages and assuming construction before year-end 2001. No inflation factor has been applied to this data.

## **5. SUMMARY OF EXISTING CLINIC DEFICIENCIES**

The attached sheets document the deficiencies; provide recommendations on how to make repairs or accommodate the needs and provide a cost estimate to accomplish the proposed modifications. The summary addresses individual deficiencies. If all deficiencies were to be addressed in a single construction project there would be cost efficiencies that are not reflected in this tabulation.

These sheets are reports from the Access Data Base of individual Deficiencies that are compiled on individual forms and attached for reference.

Refer to Section VI. New Clinic Analysis for a comparison of remodel/addition to new construction.

## 6. NEW CLINIC ANALYSIS

The analysis of whether a new clinic is required is based on the Denali Commission standard of evaluation that "New Construction is viable if the cost of Repair/Renovation and Addition exceeds 75% of the cost of New Construction".

We have therefore determined the cost of a New Clinic Construction to meet the Alaska Rural Primary Care Facility (ARPCF) Space Guidelines for a village of 297 people (2000 Census). We have also determined the cost of Repair/Renovation & Addition to the existing Clinic to meet the same ARPCF Space Guidelines.

A. The cost of a New Denali Commission 1,989 SF Medium Clinic in Koyuk is projected to be:

▪ Base Anchorage Construction Cost per s.f.		\$183
▪ Project Cost Factor:	@ 45%	\$ 82
Medical Equipment	17%	
Construction Contingency	10%	
Design Fees	10%	
Construction Administration	8%	
▪ Multiplier for Village	@ 1.712	\$189
Adjusted Cost per SF		\$454

**Projected Cost of a New Clinic:** 1,989 s.f. x \$454 = **\$903,006**  
(not inclusive of site development costs)

B. The cost of the Repair/Renovation and Additions for the existing Clinic are projected to be:

▪ Code & Condition Repairs/Renovations		
Cost from Deficiency Summary		\$355,880
▪ Remodel/Upgrade work (See Def. Code 01)		
100% of clinic 1,107 SF = 1,107 SF @ \$138/SF		\$153,153
▪ Additional Space Required by ARPCF (See Def. Code 06)		
○ Base Anchorage Cost		\$226
Medical Equipment		\$ 32
Additional Costs –		\$ 98
General Requirements	20%	
Estimation Contingency	15%	
○ Multiplier for Village	@1.712	\$253
Adjusted Cost per SF		\$609
Total Addition Cost of 882 SF @ \$609		\$536,839

Projected Cost Factor	@28%	\$292,844
Construction Contingency	10%	
Construction Administration	8%	
Design Fees	10%	

**Total Cost of remodel/addition** **\$1,338,716**



C. Comparison of Existing Clinic Renovation /Addition versus New Clinic:

**Ratio of Renovation/Addition versus New Clinic is:**

$$\text{\$1,338,716} / \text{\$903,006} = 1.48 \text{ x cost of New Clinic}$$

Based on Denali Commission standard of evaluation; the remodel/addition costs are more than 75% of the cost of new construction. A new clinic is recommended for this community.

D. Overall Project Cost Analysis:

The overall project cost analysis below incorporates land, multi-use, utility costs, and road access costs, and project management fees if any are associated with the project.

Item	Quantity	Units	Unit Cost	Area Adjustment Factor	Total Cost	Allowable under "Small" Clinic Process (yes/no)
Primary Care Clinic (Allowable)	1,989	SF	\$265.00	1.712	\$903,006	yes
Clinic (Non-allowable portion)	0	SF	\$265.64	1.712	\$0	no
Land	15,000	SF	\$2.00	1	\$30,000	yes
Multi-Use Facility Design Cost	0	LS	\$0.00	1	\$0	yes
Multi-Use Facility Construction Cost	0	LS	\$0.00	1	\$0	no
Utility Extension/Improvements	1	LS	\$15,000	1	\$15,000	yes
Road access & parking lot improvements	1	LS	\$5,000	1	\$5,000	yes
Subtotal Project Cost					\$953,006	
Project Management Fees					Unknown	
<b>Total Project Cost</b>					<b>Unknown</b>	

## **7. CONCLUSIONS AND RECOMMENDATIONS**

The existing Koyuk clinic is 882 gsf short of ARPCF standards. The physical condition of the facility is generally good considering some failure in the foundation design. The community's population is 297. There is a belief by the community that Norton Sound Health Corporation may institute a physician assistants program for communities of 300 or more.

The cost of renovations and additions to the existing facility is 1.48 times the cost of new construction making new construction less expensive. The existing clinic at 1,107 gsf would easily convert to alternative uses such as housing for a physician's assistant.

The community wants the new larger clinic as the community is growing, and community representatives indicated the current clinic is in a good location with available utilities. A site for a new clinic adjacent to the old clinic was indicated as available. However as Koyuk is a community with steep grades a site downhill from the road may create a better opportunity for level access into the facility.

Given the above discussions the consulting team recommends a new clinic for Koyuk. Additionally the consulting team recommends investigation into the physician assistant issue and overnight patient care due to weather delays in transporting critical patients. This needs to be done prior to final project funding.

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## **Appendix A: Specific Deficiencies Listings**

The attached sheets represent the individual deficiencies identified for this project and the corrective action required to meet current codes and standards of construction. The deficiencies are further summarized in Section V. Summary of Existing Clinic Deficiencies.

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**Appendix B:      Reference Photographs**